

WHAT IS CLAIMED IS:

1. An electromagnetic switching device, comprising:

an electromagnetic actuator which has a solenoid coil wound around an axis and having a hollow part on the axis, a movable iron core placed movably in said hollow part along said axis, a first yoke placed on one of the ends of said solenoid coil, facing one of the ends of said axis and having the insertion hole above said axis, and a second yoke placed on the other end of said solenoid coil and facing the other end of said axis;

a pair of fixed terminals, which respectively have the fixed contact points on one of the ends of said axis as well as the terminal area connected to the external circuit respectively on the other end of said axis;

a movable contact, which has a pair of movable contact points on the both ends that respectively contact with and detach from said fixed contact points;

a shaft, which has the connecting axis that is fixed to the retentive part that retains said movable contact, that extends from this retentive part to the other end of said axis, that is inserted through the insertion hole of said first yoke, and that is fixed to said movable iron core; and

an enclosing component, which said movable contact points and said fixed contact points are placed in,

wherein the pair of said movable contact points respectively contacts with and detaches from the pair of said fixed contact points through said shaft by moving said movable iron core up and down along said axis using said electromagnetic actuator, the enclosing component is formed into a box shape with an opening on the other side of said axis, each side of the fixed contact points of the pair of said fixed terminals are inserted from the bottom part of the enclosing component and are fixed, the quasi-hermetically sealed space is formed by the enclosing component and at least said first yoke, and said movable contact points and said fixed contact points are placed in the quasi-hermetically sealed space.

2. An electromagnetic switching device according to Claim 1,

wherein it has a body that holds the main body of the electromagnetic switching device with said terminal area projecting outward and that has a potting compound charged into a space between said body and said quasi-hermetically sealed space.

3. An electromagnetic switching device according to Claim 1,

wherein a distance between an inside wall of said enclosing component and said

movable contact is narrow at the part that is near said shaft, and is wider at the part that is far from said shaft.

4. An electromagnetic switching device according to Claim 1, wherein it has the recess, which has the insertion hole on the other side of said axis and is fixed at the bottom part of said enclosing component, on the bottom part; the flange that rubs the inner surface of said recess to the direction of said axis is formed on the part of one of the ends of said shaft, and the insertion hole is made on the flange as well as the valve that opens and closes the insertion hole; said insertion hole is covered by inserting one of the ends of the shaft, which includes said flange, through said insertion hole; and said recess is filled with the gas, fluids or particles that become resistant to the movement of said shaft along said axis.

5. An electromagnetic switching device according to Claim 1, wherein it has a mass body, which vibrates along said axis by elastically deforming, in at least one moving part in order to restrain the movement of the moving part that moves accompanying the movement of said movable iron core.

6. An electromagnetic switching device according to Claim 1, wherein it has a gap that has a quasi-connection between the respective facing surfaces of said first yoke and said movable iron core.

7. An electromagnetic switching device according to Claim 1, wherein it has an enclosure with fluids inside at the position where at least one of the following collides: said movable iron core, the shaft or the movable contact.

8. An electromagnetic switching device according to Claim 1, wherein it has a body that holds the main body of the electromagnetic switching device with said terminal area projected outward; and said body has the mountings with insertion holes to insert a fixing component used to attach the body to the external mountings, pipes made of high damping steel are inserted into said insertion holes, and with the pipes intervening, said body is fixed to the external mountings by inserting the fixing component through the inserting holes or the pipes on said mountings.

9. An electromagnetic switching device according to Claim 1,
wherein it has a body that holds the main body of the electromagnetic switching device
with said terminal area projected outward;
and said body has the mountings with the insertion holes to insert the fixing component
used to attach the body to the external mountings, a flexible ring-shaped component that
encloses the magnetic fluids, MR fluid or ER fluid is provided on the attaching side of
the mountings, and with the ring-shaped component intervening, said body is fixed to
the external mountings by inserting the fixing component through the insertion holes or
the pipes on said mountings.